

wherein there is substantially no stringer of an oxide of titanium on the layer of cobalt disilicide.

The present invention provides a structure, comprising:
a layer of cobalt disilicide, wherein the layer of cobalt disilicide is substantially free of cobalt monosilicide;

a patch of an oxide of titanium, wherein the patch is on the layer of cobalt disilicide; and

a reagent in contact with the patch at a temperature, wherein the reagent is adapted to remain in contact with the patch for a period of time, wherein the reagent removes the patch within the period of time, wherein the reagent does not chemically react with the layer of cobalt disilicide, and wherein the reagent comprises water, ammonium hydroxide, and hydrogen peroxide.

The present invention provides a structure having a substrate, wherein the substrate includes:

an insulated-gate field effect transistor (FET), wherein the FET includes a source, a drain, and a gate;

a first layer of cobalt disilicide on the source, said first layer having substantially no cobalt monosilicide, and said first layer having substantially no stringer of an oxide of titanium thereon;

AC
Cont'd

a second layer of cobalt disilicide on the drain, said second layer having substantially no cobalt monosilicide, and said second layer having substantially no stringer of an oxide of titanium thereon; and

a third layer of cobalt disilicide on the gate, said third layer having substantially no cobalt monosilicide, and said third layer having substantially no stringer of an oxide of titanium thereon.

The present invention provides a structure having a substrate, wherein the substrate includes:

an insulated-gate field effect transistor (FET), wherein the FET includes a source, a drain, and a gate;

a first layer of cobalt disilicide on the source, said first layer having substantially no cobalt monosilicide;

a second layer of cobalt disilicide on the drain, said second layer having substantially no cobalt monosilicide;

a third layer of cobalt disilicide on the gate, said third layer having substantially no cobalt monosilicide;

a patch of an oxide of titanium on a region of cobalt disilicide, said region selected from the group consisting of the first layer of cobalt disilicide, the second layer of cobalt disilicide, the third layer of cobalt disilicide, and combinations thereof;

A² Concl'd

a reagent in contact with the patch at a temperature, wherein the reagent is adapted to remain in contact with the patch for a period of time, wherein the reagent removes the patch within the period of time, wherein the reagent does not chemically react with the first layer of cobalt disilicide, wherein the reagent does not chemically react with the second layer of cobalt disilicide, wherein the reagent does not chemically react with the third layer of cobalt disilicide, and wherein the reagent comprises water, ammonium hydroxide, and hydrogen peroxide.

Use of a FET in the preceding structures is merely illustrative, and any semiconductor structure may be used instead of a FET in the preceding structures.

The structures of the present invention have the advantage of not including, or facilitating removal of, stringers of one or more oxides of titanium.

IN THE ABSTRACT

The Abstract as amended herein is as follows.

A³

A structure relating to removal of an oxide of titanium generated as a byproduct of a process that forms cobalt disilicide within an insulated-gate field effect transistor (FET). The structure may comprise a layer of cobalt